ABSTRAK

Pengelolaan data kepemilikan tanah di tingkat desa masih banyak dilakukan secara manual menggunakan dokumen fisik dan spreadsheet, sehingga menyulitkan proses pencarian, pemetaan, dan analisis. Desa Jatisari sebagai objek penelitian menghadapi permasalahan serupa, khususnya dalam hal pengambilan keputusan berbasis data pertanahan yang tersebar dan tidak terintegrasi. Berdasarkan hal tersebut, penelitian ini bertujuan untuk merancang dan mengembangkan sistem *Business Intelligence* (BI) yang dapat menyajikan data kepemilikan tanah secara terstruktur, visual, dan mudah dipahami melalui dashboard interaktif. Penelitian juga menerapkan proses ETL (*Extract, Transform, Load*) untuk memproses data mentah menjadi informasi siap pakai, serta menampilkan informasi penting yang mendukung keputusan pemerintah desa.

Penelitian ini menggunakan pendekatan rekayasa perangkat lunak dengan metode implementasi Business Intelligence yang terdiri atas tahapan: justifikasi, perencanaan, analisis kebutuhan, perancangan sistem, pembangunan, dan penyajian sistem. Data primer dikumpulkan dari arsip Kantor Desa Jatisari dan dokumen resmi Badan Pertanahan Nasional (BPN), kemudian diproses melalui Pentaho Data Integration untuk tahapan ETL dan divisualisasikan dalam Power BI. Dashboard yang dikembangkan menampilkan indikator visual seperti total luas tanah per wilayah, klasifikasi ukuran bidang, dan status legalitas bidang berdasarkan NIB. Visualisasi dilakukan secara interaktif dengan dukungan filter wilayah untuk mendukung pemahaman data yang lebih cepat dan tepat.

Hasil pengujian melalui *User Acceptance Test* (UAT) yang melibatkan perangkat desa menunjukkan tingkat kepuasan rata-rata sebesar 94%, dengan penilaian positif terhadap kemudahan penggunaan, kejelasan navigasi, dan penyajian informasi yang interaktif. Sistem ini telah disimulasikan kepada pihak desa dan dinilai membantu proses digitalisasi data pertanahan, mempercepat analisis, serta mendukung pengambilan keputusan yang lebih akurat dan efisien di lingkungan pemerintahan desa.

Kata Kunci: *Business Intelligence, Pentaho, ETL, Kepemilikan Tanah, Visualisasi Data, Pengambilan Keputusan, Desa Jatisari*

ABSTRACK

Land ownership data management at the village level is still largely done manually using physical documents and spreadsheets, making it difficult to search, map, and analyze. Jatisari Village, as the object of this study, faces similar problems, particularly in terms of making decisions based on scattered and unintegrated land data. Based on this, this study aims to design and develop a Business Intelligence (BI) system that can present land ownership data in a structured, visual, and easy-to-understand manner through an interactive dashboard. The study also applies the ETL (Extract, Transform, Load) process to process raw data into usable information, as well as display important information that supports village government decisions.

This study uses a software engineering approach with a Business Intelligence implementation method consisting of the following stages: justification, planning, requirements analysis, system design, development, and system presentation. Primary data was collected from the archives of the Jatisari Village Office and official documents from the National Land Agency (BPN), then processed through Pentaho Data Integration for the ETL stage and visualized in Power BI. The developed dashboard displays visual indicators such as total land area per region, land parcel size classification, and land parcel legal status based on the NIB. Visualization is performed interactively with regional filter support to facilitate faster and more accurate data understanding.

The results of testing through User Acceptance Testing (UAT) involving village officials showed an average satisfaction rate of 94%, with positive assessments of ease of use, clarity of navigation, and interactive information presentation. This system has been simulated for village officials and is deemed to assist in the digitization of land data, accelerate analysis, and support more accurate and efficient decision-making within the village government environment.

Keywords: Business Intelligence, Pentaho, ETL, Land Ownership, Data Visualization, Decision Making, Jatisari Village